

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method in a data processing system for generating coverage data for accesses to data during execution of code in the data processing system, the method comprising:
detecting that access to data in a memory location having a data access indicator associated therewith has occurred during execution of ~~responsive to executing~~ an instruction in the code at a processor in the data processing system, ~~determining whether an access to a memory location associated with a data access indicator has occurred;~~ and
changing a state of the data access indicator by the processor when the instruction is executed, ~~if the data access indicator is associated with the memory location, wherein~~ for generating coverage data for accesses to data is generated during execution of the code by the processor.
2. (Currently amended) The method of claim 1, wherein the changing step comprises:
receiving a signal at a data cache in the processor ~~[[from]]~~ generated by a completion buffer in the processor indicating that data in the memory location has been accessed during the execution of the instruction; and
responsive to receiving the signal, changing the state of the access indicator by the data cache.
3. (Original) The method of claim 1, wherein the access indicator is located in a field in the instruction.
4. (Original) The method of claim 1, wherein the access indicator associated with the instruction is located in a shadow memory.
5. (Original) The method of claim 1, wherein the access indicator associated with the instruction is located in a page table.
6. (Original) The method of claim 1, wherein the memory location accessed during the execution of the code have set data access indicators when the state of the access indicators associated with the executed instruction are changed, while the memory location unaccessed during the execution of the code have unset data access indicators because the state of the unset data access indicators remain unchanged.

7. (Original) The method of claim 1, wherein data access indicators are associated with every memory location within the code.
8. (Original) The method of claim 1, wherein data access indicators are associated only with selected memory locations.
9. (Original) The method of claim 1, wherein the memory location is at least one of a byte, a word, and a double word.
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Currently amended) A data processing system for generating coverage data for accesses to data during execution of code in the data processing system, the data processing system comprising:
 - ~~determining~~ detecting means, ~~responsive to executing~~ for detecting that access to data in a memory location having a data access indicator associated therewith has occurred during execution of an instruction in the code at a processor in the data processing system, ~~for determining whether an access to a memory location associated with a data access indicator has occurred~~; and
 - changing means for changing a state of the data access indicator by the processor when the instruction is executed, ~~if the data access indicator is associated with the memory location, wherein for~~ generating coverage data is ~~generated~~ during execution of the code by the processor.
14. (Currently amended) The data processing system of claim 13, wherein the changing means comprises:
 - receiving means for receiving a signal at a data cache in the processor ~~[[from]]~~ generated by a completion buffer in the processor indicating that data in the memory locaton has been accessed during execution of the instruction; and
 - means, responsive to receiving the signal, for changing the state of the access indicator by the data cache.

15. (Original) The data processing system of claim 13, wherein the access indicator is located in a field in the instruction.
16. (Original) The data processing system of claim 13, wherein the access indicator associated with the instruction is located in a shadow memory.
17. (Original) The data processing system of claim 13, wherein the access indicator associated with the instruction is located in a page table.
18. (Original) The data processing system of claim 13, wherein the memory location accessed during the execution of the code have set data access indicators when the state of the access indicators associated with the executed instruction are changed, while the memory location unaccessed during the execution of the code have unset data access indicators because the state of the unset data access indicators remain unchanged.
19. (Original) The data processing system of claim 13, wherein data access indicators are associated with every memory location within the code.
20. (Original) The data processing system of claim 13, wherein data access indicators are associated only with selected memory locations.
21. (Original) The data processing system of claim 13, wherein the memory location is at least one of a byte, a word, and a double word.
22. (Currently amended) A computer program product in a computer readable medium for generating coverage data for accesses to data during execution of code in the data processing system, the computer program product comprising:
- first instructions, ~~responsive to executing~~ for detecting that access to data in a memory location having a data access indicator associated therewith has occurred during execution of an instruction in the code at a processor in the data processing system, for determining whether an access to a memory location associated with a data access indicator has occurred; and
- second instructions for changing a state of the data access indicator by the processor when the instruction is executed, ~~if the data access indicator is associated with the memory location, wherein for~~ generating coverage data is generated for accesses to data during execution of the code by the processor.

23. (Currently amended) The computer program product of claim 22, wherein the second instructions comprises:

first sub-instructions for receiving a signal at a data cache in the processor ~~[[from]]~~ generated by a completion buffer in the processor indicating that data in the memory location has been accessed during the execution of the instruction; and

second sub-instructions for responsive to receiving the signal, changing the state of the access indicator by the data cache.

24. (Original) The computer program product of claim 22, wherein the memory location accessed during the execution of the code have set data access indicators when the state of the access indicators associated with the executed instruction are changed, while the memory location unaccessed during the execution of the code have unset data access indicators because the state of the unset data access indicators remain unchanged.